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First record of Pseudostigmatidae (Insecta: Odonata) in the Northeast Region of Brazil

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Abstract: We record the first occurrence of *Mecistogaster amalia* (Burmeister, 1839) for the state of Rio Grande do Norte, Brazil, which is the first record of this genus and family for the whole Northeast Region of Brazil. This record is based on four collected samples and extends by more than 1,500 km to the north, the area known of distribution of this species.

Key words: Pseudostigmatidae, *Mecistogaster amalia*, Northeast Brazil, Rio Grande do Norte, Baia Formosa

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The family Pseudostigmatidae (Odonata: Zygoptera) is currently composed of 6 genera (Schorr and Paulson 2012). Five of these genera have a Neotropical distribution: *Megaloprepus* Rambur, 1842 (1 sp.), *Pseudostigma* Selys, 1860 (1 sp.), *Mecistogaster* Rambur, 1842 (11 spp.) and *Microstigma* Rambur, 1842 (3 spp.), *Anomisma* McLachlan, 1877 (1 sp.), (Garrison et al. 2010). The last three occur in Brazil with 7, 3 and 1 species respectively (Lencioni 2005; Garrison et al. 2010). To date, there was no report of a representative of this family in Northeast Brazil.

The genus *Mecistogaster* ranges from Mexico through Central America and the Amazon basin, to the southeastern Brazil and northern Argentina (Garrison et al. 2010).

Until now, the known distribution of *Mecistogaster amalia* (Burmeister, 1839) extended through southeastern (states of Rio de Janeiro (Carvalho and Pujol-Luz 1992; Pujol-Luz 1993; Lencioni 2005; Rocha et al. 2009; Santos et al. 2010), São Paulo (Costa et al. 2000; Lencioni 2005), and Espírito Santo (Costa and Oldrini 2005)) and southern Brazil (Santa Catarina (von Ellenrieder and Paulson 2006) and Rio Grande do Sul (Dalzochio et al. 2011)) to Misiones province, northeastern Argentina (Muzón et al. 2010).

In September 2009, an adult male *M. amalia* was collected within a small undisturbed remnant of the humid Atlantic Forest in southeastern Rio Grande do Norte state (06°27.151′ S, 035°03.195′ W). This is the first record of a pseudostigmatid from anywhere in the Northeast Region of Brazil, which comprises the states of Bahia, Sergipe, Alagoas, Pernambuco, Paraíba, Rio Grande do Norte, Ceará, Piauí and Maranhão (Figure 1).

At the collection site, the forest formation consisting of gallery forest and trees of great size (the larger trees are >30 m tall and with diameters >100 cm) follows the banks of a small stream. This forest covers an area of ca. 700 ha and is one of the best preserved in the state. The forest is well stratified and has high floristic diversity. *Mecistogaster amalia* was collected flying over a marshland by the bank of a creek in a riparian forest at the bottom of a valley. *Forcepsioneura* sp., *Idioneura ancilla* (Selys, 1860), and *Neoneura* sp. (Protoneuridae), as well as *Telebasis filiola* (Perty, 1834) and *T. griffinni* (Martin, 1896) (Coenagrionidae), were also observed in the same habitat; all of these species are rare to the Rio Grande do Norte (Irusta, unpublished data).

After confirmation of the identification of the species by Lencioni, three more specimens of *M. amalia* were found in the insect collection at the Universidade Potiguar, Natal, Rio Grande do Norte. These were the results of entomological collections gathered in 2003 and 2004 by students and teachers of the Biology Department. Among this material, we found an adult male, an immature male and an adult female; the last two samples were poorly preserved. These three specimens were collected in the private reserve of Mata da Estrela (06°23.046′ S, 035°0.800′ W), an ombrophilous forest lacking water courses. This habitat is less humid compared to the previously cited record, which is ca. 7 km away in a straight line. The second habitat is in accord with the observations of Fincke (2006), who noted that some species of *Mecistogaster* occur in dry tropical forests. The four specimens are deposited in the entomological collection Adalberto Antonio Varela Freire of the Universidade Federal do Rio Grande do

Figure 1. Distribution of the records of *Mecistogaster amalia* in Brazil and Argentina. Red dot shows the area of the recent records for Rio Grande do Norte state. Yellow polygon shows the Brazilian Northeast Region.

Norte, with code numbers ZA-619, ZA-773, ZA-774 and ZA-775.

These four records significantly extend northward the known distribution of this species by more than 1,500 km. The previous northernmost record is from Espírito Santo state (Costa and Oldrini 2005). The species probably inhabits forested areas between these two states, probably following the distribution of the Atlantic Rainforest biome. The lack of other records in this extensive territorial strip is most likely due to the absence of odonatological surveys across the northeastern coast. This remarkable range extention for *M. amalia* provides new data important to update the IUCN status, currently "insufficiently known" (von Ellenrieder and Paulson 2006). We hope this interesting discovery will bring notice to responsible governing agencies and encourage a strong and active program of biological research and conservation initiatives in the Northeast Region of Brazil, where much of the biodiversity is still enormously unknown.

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